

1- 14 - Canceled

15. (currently amended): A real time PCR instrument comprising

- at least 1 light source,
- a plurality of a least 5 optical fiber bundles, each said bundle transmitting light to one of a plurality of at least 5 separate fluorescent detector entities, each of said entities having a central detection wavelengths wavelength said wavelengths being which are distinct from each other by at least 25 –30 nm,

and characterized in that said plurality of detector entities are is capable of

- simultaneously detecting maximum fluorescence emission of at least 5 different fluorescent compounds ~~3-differently-labeled-FRET-Hybridization Probe pairs,~~
- simultaneously detecting maximum fluorescence emission of at least 2 differently labeled TaqMan hybridization probes, and
- detecting maximum fluorescence emission of SybrGreenI
- means for heating and cooling, and
- multiple reaction vessels for containing a reaction mixture.

16. (previously amended): A real time PCR instrument according to claim 15 comprising one light source.

17. (previously amended): An instrument according to claim 15, wherein said central detection wavelengths are selected from a group of range of wavelengths, said group consisting of 520-540 nm, 545-565 nm, 570-590 nm, 600-620 nm, 630-650 nm, 660-680 nm, and 700-720 nm.